

CLIMATOLOGY OF THE MONTH.

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GENERAL CHARACTERISTICS.

On the north Pacific Coast there was much rain; the valleys of the Chehalis and Skyhomish were flooded, greatly to the detriment of property interests therein; temperature was somewhat above normal; there were violent winds at times which contributed to the destruction of several vessels and the loss of half a score or more of lives.

On the middle and south Pacific coasts the reverse conditions obtained. Cold, dry winds prevailed, and the temperature over middle and southern California and Arizona fell to a lower point than usual. The prolonged cold spells of the 3d-4th, 19th, 20th, 21st, and 22d caused more or less apprehension for the safety of citrus fruits and trees; later reports, however, showed that the damage was less than anticipated.

The weather of the Rocky Mountain and Plateau Region was colder than usual; the precipitation was mostly in the form of snow and somewhat less than the normal amount.

East of the Rocky Mountains cold weather with rain and snow prevailed on the 2d, 3d, 4th, and 5th. Freezing temperatures occurred as far south as Texas, the Gulf Coast, and Louisiana.

The remarkably low temperature of forty-three degrees below zero (-43°) was recorded at Havre on the morning of the 2d. Observer C. W. Ling in charge of that station writes concerning the phenomenon as follows:

The range of temperature, 68° on the 3d, is the greatest daily range on record at this station for eighteen years past, and the temperature, 43° below zero on the 2d, is the lowest on record for this station for first decade of December, and also the lowest that has ever occurred at this station so early in the season. The total daily wind movement was 26 miles on the 1st and 8 miles on the 2d, 8 miles being the least total daily wind movement on record for this station.

Cloudy weather with occasional rain or snow prevailed east of the Mississippi River from the 8th to the 15th. Heavy fog interfered with navigation on the Great Lakes on the 9th and on the North Atlantic on the 10th.

On the 14th a cold wave appeared north of Montana, which gradually spread eastward and southward with rain, changing to sleet and snow on its front. The cold wave was preceded by a rain and snow storm throughout Kansas, Nebraska, and Missouri on the 13th and 14th, which continued for about eighteen hours. By the morning of the 16th the front of the cold wave had reached northern Texas, Oklahoma, Arkansas, Missouri, and Illinois; it was accompanied in many cases by a thunderstorm. The temperature fall was quite sharp, being as much as 40° in five hours, in some instances. Several deaths from cold were reported. Much damage, especially to electric wires, trees, and shrubbery, was done by the rain and sleet storm throughout northern Texas, Arkansas, western Tennessee, and Missouri on the 19th and 20th. It had been raining or snowing throughout this region since the 17th and at many places the rain froze as it fell, forming a thick coating of ice over exposed objects. The ice layer so formed was greatly augmented by the heavy fall of sleet that occurred on the night of the 19th. Wires broke under the load, trees were denuded of their limbs, and, according to press dispatches, at least three lives were lost by falling limbs.

Alternating clear and cloudy weather, with rain or snow at times, prevailed from the 21st until the end of the month. On the 31st a severe rain and snow storm passed over the upper Ohio Valley and the Middle States, the greatest financial loss being sustained in Pittsburg, where at least a foot

of snow fell, completely wrecking the various systems of electric wires and temporarily blocking traffic on streets and street car lines.

The greatest foggiest during the month occurred from the 9th to the 12th in the Lake Region and on the north Atlantic Coast.

ATMOSPHERIC PRESSURE.

[In inches and hundredths.]

In December atmospheric pressure is generally greatest over the middle Plateau Region, where it averages about 30.25 inches. There is also a smaller area of relatively high pressure over western North and South Carolina, northern Georgia, and eastern Tennessee. Pressure is generally least in the St. Lawrence Valley and the north Pacific Coast. From both of these regions pressure decreases toward the permanent areas of low pressure in the north Atlantic Ocean and Bering Sea, respectively. In the United States there is generally an increase of pressure from November to December.

The distribution of mean atmospheric pressure reduced to sea level, as shown by mercurial barometers, not reduced to standard gravity, and as determined from observations taken daily at 8 a. m. and 8 p. m. (seventy-fifth meridian time), is shown by isobars on Chart IV. That portion of the reduction to standard gravity that depends on latitude is shown by the numbers printed on the right-hand border.

The distribution of mean pressure for the current month reduced to sea level does not differ in a marked degree from the normal.

Pressure was below normal over the middle plateau in November, 1897. The single area of high pressure inclosed by isobars varying from 30.15 to 30.30 inches, that generally appears in that region, was broken into two separate areas of 30.15 inches the greater of which covered Assiniboia and the Dakotas (see Chart IV, November Review). The greatest increase in pressure during the current month was in the region above named, where, during last month, pressure was relatively low. Aside from the fact that pressure on the Pacific Coast, the Rocky Mountain, and Plateau Regions was much greater than usual there were no special features that call for remark. The pressure distribution on the Pacific Coast and Plateau Region was not favorable to precipitation over middle and southern California.

The numerical values of Table I should be consulted for additional details.

TEMPERATURE OF THE AIR.

[In degrees Fahrenheit.]

The month was generally colder than usual. Unseasonable temperatures, with heavy frost in exposed places, occurred in southern California and Arizona on the 3d, and again on the 19th, 20th, 21st, and 22d, the cold of the last-named period being the most severe of the month. The temperature fell to 30° at Los Angeles on the morning of the 21st, a point as low as ever before recorded during December. The cold wave of the 3d-5th, east of the Rocky Mountains, overspread the plains region and Texas, moving eastward from the latter point into Louisiana by the morning of the 5th. Snow and sleet prevailed over northern Texas and snow flurries over the interior of Louisiana. The temperature in these regions fell to the lowest point reached during the month. The first killing frost and ice of the season at New